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DE RUEHUP #0224/01 0821604
ZNR UUUUU ZZH
R 231604Z MAR 09
FM AMEMBASSY BUDAPEST
TO RUEHC/SECSTATE WASHDC 4008
INFO RUEHZN/ENVIRONMENT SCIENCE AND TECHNOLOGY COLLECTIVE
RUCPDO/DEPT OF COMMERCE WASHDC

UNCLAS SECTION 01 OF 03 BUDAPEST 000224

SIPDIS

OES/STC FOR ROBERT RUDNITSKY

E.O. 12958: N/A

TAGS: [TSPL](#) [TNGD](#) [TPHY](#) [TBIO](#) [ETTC](#) [ETRD](#) [PREL](#) [RS](#) [HU](#)
SUBJECT: NANOTECHNOLOGY IN HUNGARY

REF: RUDNITSKY REQUEST AT SEPTEMBER 2008 ESTH
OFFICER'S CONFERENCE IN BUDAPEST FOR
INFORMATION ON NANOTECHNOLOGY IN HOST
COUNTRIES

¶1. (U) Summary: In February and March 2009, Post investigated Hungary's nanotechnology capabilities through a series of meetings with experts and government officials. We found that Hungary has solid scientific expertise in certain nanotechnology areas, but lacks a national strategy for nanosciences. Hungarian researchers are engaged in a vibrant array of nanotechnology research. We are aware of no limits to trade in products containing nanotechnology in Hungary, and several such products are on the market. Nanotechnology as a scientific discipline is regularly presented in all types of media. Although data on public opinion on nanotechnology is not currently available, there is no indication that the general public opposes this technology, and experts believe that the public regards it positively. End summary.

POLICY ON NANOTECHNOLOGY

¶2. (U) On March 6, ESTH LES met Dr. Ferencne Mokry, head of the EU Relations Unit at the National Research and Technology Office (NKTH - an agency which distributes approximately 20 percent of Hungarian R&D grants). Mokry said that Hungary identified nanotechnology as a key technology area in its Science, Technology and Innovation Policy Strategy for 2007-2013. The strategy mandates supporting the key areas identified with technology platforms, knowledge centers, and information clusters. According to Mokry, however, there are no NKTH grants exclusively dedicated to nanotechnology because the Agency's policy is to fund only application-oriented research in certain priority areas including: IT, environment, materials science, life sciences, and others. However, some NKTH-funded projects include nanotechnology-related research.

¶3. (U) Currently there are several state-supported Regional University Knowledge Centers focusing on all major disciplines where nanotechnology is involved (environmental science, energy research, health and medicines, IT, etc.). These Knowledge Centers cooperate with international partners and local small and medium-sized enterprises to identify commercial uses for their findings. The Hungarian National Academy of Sciences also manages several institutions that conduct nanotechnology research in the fields of material science, nanochemistry, and nuclear science.

EXPERT OPINIONS

¶4. (U) Experts consulted by Post confirm the lack of a well-coordinated national nanotechnology program. On March 5, Laszlo Biro, Head of the Nanostructures Laboratory of the

Research Institute for Technical Physics and Materials Science of the Hungarian Academy of Sciences (MTA MFA; its website: <http://ww.nanotechnology.hu/index.html>) advised ESTH LES that although nanotechnology has a growing importance in the Hungarian R&D landscape, R&D spending in the overall financial picture is poorly thought out and insufficient. According to Biro, the money that is available is not spent efficiently. His research group relies on EU FP7 funds to provide a secure funding stream for high-level basic research. Biro would like to see a National Expert Board on Nanotechnology, made up of renowned scientists, which could identify and define those nanotechnology areas that Hungary needs to research the most to keep up with international scientific developments, as well as the areas in which Hungary can achieve outstanding results.

THE RUSSIAN CONNECTION TO THE INSTITUTE OF NANOTECHNOLOGY

¶5. (U) In 1992, using the German Fraunhofer Institute chain as a model, the Hungarian government created Hungary's own applied research network, the Bay Zoltan Institutes. There are now six Bay Zoltan Institutes, two of which are involved in nanotechnology. One of these, the Institute of Nanotechnology (Bay Nano), established in Miskolc in 2006, is entirely dedicated to nanosciences (its website: http://www.bzlogi.hu/bzaka_angol.head.page?nodeid=307). According to its mission statement, Bay Nano focuses on applied research, education in cooperation with the Miskolc Technical University, and helping small and medium-sized enterprises solve technological and logistical problems.

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¶6. (U) According to local press, the genesis of Bay Nano dates back to September 2005, when Russian Prime Minister Mikhail Fradkov visited Hungary for talks with Hungarian Prime Minister Ferenc Gyurcsany. One of the outcomes of the visit was an agreement between the two governments to cooperate on nanotechnology. The agreement included joint financing for the creation and operation of a new nanotechnology institute to be established in the city of Miskolc. The new institute subsequently set up was Bay Nano.

¶7. (U) ESTH Hub officer and ESTH LES visited Bay Nano on February 12. Andras Pungor, Head of Bay Nano, indicated that the initial objective of Russian-Hungarian cooperation on nanotechnology was to test the Russian-made NT-MDT scanning electron microscope and co-develop improvements to it. Although Hungary purchased this microscope and other Russian-made equipment for Bay Nano, the Russian government has not yet contributed any funding to the institute.

¶8. (U) Comment: Laszlo Biro commented that he believes that the failure of the Russian Government to provide the promised funding implies that the Russian motivation was to sell Russian equipment rather than an actual interest in joint research. We have no reason to doubt Biro's judgment on this. Nevertheless, regardless of Russian intent and lack of follow through, we believe Miskolc, with its Technical University as well as Bay Nano, has the potential to be a nanoscience research hub.

COMMERCIAL DATA

¶9. (U) As in all EU member states Hungary's market is open to all the products generally present in the EU, including those containing nanoparticles. There is no database tracking nanoparticle content in products sold in Hungary.

PUBLIC PERCEPTION OF NANOTECHNOLOGY

¶10. (U) Andras Pungor advised ESTH on February 12 that the Hungarian public is generally less aware of nanotechnology

than Western European populations, and consequently has fewer fears and hopes for nanotechnology. There is currently no trend of negative public perception of nanotechnology. Laszlo Biro concurred on March 5, adding that the scientific community is active in science and communication and ensures that research results are regularly presented in all types of media.

¶11. (U) While there is no data available at this time to support or dispute Pungor and Biro's assessments, more exact information about the public perception of nanotechnology may be available soon. Eniko Demeny, a researcher at the Central European University's Center for Ethics and Law who is part of a research group participating in the EU-funded Nanoplat project, informed ESTH LES on February 24 that Nanoplat aims to develop a deliberate and science-based platform for a stakeholder dialogue in the field of nanotechnology. To identify topics for further dialogue, the Hungarian team will interview selected stakeholders and consumer groups.

¶12. (U) The Hungarian Food Safety Office has launched an initiative to collect information about public views on nanotechnology. The Office has posted Q&As on nanotechnology on its website, including an invitation to interested parties to contact them with further questions.

¶13. (U) NKTH's Ferencné Mokry told ESTH LES on March 6 that her office also supports science communication and science journalism projects to publicize all kinds of science, including nanotechnology. Laszlo Biro expressed similar support for science communication to us on March 5, noting that his research group created a website (www.nanotechnology.hu) to make the Academy's latest nanotechnology research results available to the general public.

MAIN NANOTECHNOLOGY RESEARCH AREAS IN HUNGARY

¶14. (U) Hungarian Scientists are primarily working on nanosensors, microfluidics, nanoelectronics, graphene, nanotubes, fullerenes, nanomedicine, and nanocomposites. Some examples include:

- Creation of carbon fiber reinforced aluminum matrix composite (Bay Nano)
- Liposome-encapsulated nanomedicine (Bay Nano)
- Nanolink for inkjet printers (Bay Nano)
- Surface modification of carbon nanotubes (Bay Nano)

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- Tailor-made graphene nanoribbons (MTA MFA)
- Bioinspired photonic crystals (MTA MFA)
- Structural models for coiled nanotubes (MTA MFA)
- Microstructure created and driven by light (Institute of Biophysics in the Biological Research Center in Szeged)
- Fullerene-carbon composites (Research Institute for Solid State Physics and Optics)

NANOTECHNOLOGY AND NTE IN FCS FY09 STRATEGIC PLAN

¶15. (U) FCS included nanotechnology in the initial universe of its New-To-Export (NTE) Emerging Technologies Identification Strategy. FCS will identify two to three emerging R&D technologies in which there are significant Hungarian academic and institutional interest and activities.

A key element is that these sectors will benefit from partnering with U.S. NTE technology companies to commercialize and market those technologies. Once the key sectors are selected, FCS will identify the universities, innovation centers, incubators, and companies in those sectors and reach out to the appropriate USEACs, State Development Agencies, and other USG agencies to identify and promote the program to NTEs. Further, FCS will coordinate with the Embassy's Office of Defense Cooperation, the ESTH section, and Public Affairs to promote this initiative to

their science and government contacts. FCS has developed a list of leaders in each potential NTE sector and is in the process of meeting with them. After those meetings, FCS will assess the most viable sectors and proceed to make their U.S. contacts.

POST POINTS OF CONTACT FOR NANOTECHNOLOGY

¶16. (U) Should the Department wish any further information on nanotechnology in Hungary, post POCs for this subject are Regional ESTH Hub Officer Camille Hill (HillCD2@state.gov, tel 36-1-475-4956), ESTH Hub LES Tibor Kovacs (KovacsT@state.gov, tel. 36-1-475-4439), and FCS LES Zsolt Makai (zsolt.makai@mail.doc.gov).
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